

S/051/60/009/004/007/03<sup>4</sup>

E201/E191

AUTHORS:

Bystrov, D.S., Sumarokova, T.N., and Filimonov, V.N.

TITLE:

Infrared Absorption Spectra of Urea and Thiourea  
Complexes with Tin Chloride and Bromide

PERIODICAL: Optika i spektroskopiya, 1960, Vol 9, No 4, pp 460-466

TEXT: The authors studied the infrared absorption spectra of urea  $(\text{NH}_2)_2\text{CO}$ , its three complexes,  $2(\text{NH}_2)_2\text{CO} \cdot \text{SnCl}_4$ ,  $(\text{NH}_2)_2\text{CO} \cdot \text{TiCl}_4$  and  $2(\text{NH}_2)_2\text{CO} \cdot \text{SnBr}_4$ , of thiourea  $(\text{NH}_2)_2\text{CS}$ , and its two complexes,  $2(\text{NH}_2)_2\text{CS} \cdot \text{SnCl}_4$  and  $2(\text{NH}_2)_2\text{CS} \cdot \text{SnBr}_4$ . The purpose of the investigation was to find where metal halides were attached to urea and thiourea molecules and to find the effect of such attachment on the attached molecules. The infrared spectra were recorded using a technique described earlier (Ref 5). Thin layers of complexes were prepared by sublimation in vacuum (Refs 1, 2) or by interaction of sublimated layers of urea or thiourea with appropriate vapours (the latter method was used only for  $\text{SnCl}_4$ ). 

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S/051/60/009/004/007/034  
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Infrared Absorption Spectra of Urea and Thiourea Complexes with Tin Chloride and Bromide

The spectra were found to be independent of the method of preparation; they were recorded with an infrared spectrometer MIR-14 (IKS-14). The results for urea and its complexes are given in Tables 1 and 2 and Figs 1 and 2. The results for thiourea and its complexes are listed in Table 3 and shown in Fig 3. It was found that in urea complexes  $\text{SnCl}_4$  and  $\text{TiCl}_4$  were attached to oxygen, while  $\text{SnBr}_4$  was attached to nitrogen. In thiourea complexes  $\text{SnCl}_4$  and  $\text{SnBr}_4$  were attached to sulphur.

Acknowledgements are made to A.N. Terenin who directed this work. There are 3 figures, 3 tables and 17 references: 4 Soviet, 5 English, 1 French, 1 Swiss, 2 translations into Russian and 4 from international journals.

SUBMITTED: January 12, 1960

Card 2/2

5.4100

77345  
SOV/79-30-1-6/78

AUTHORS: Sumarokova, T. N., Nurmakova, A. K.

TITLE: Electric Conductance, Viscosity, and Density of Systems  
 $\text{SnBr}_4\text{-C}_2\text{H}_5\text{COOH}$ ,  $\text{SnBr}_4\text{-C}_3\text{H}_7\text{COOH}$ ,  $\text{SnBr}_4\text{-C}_5\text{H}_{11}\text{COOH}$

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 1, pp 29-37  
(USSR)

ABSTRACT: The compounds formed by stannic chloride with monocarboxylic acids, conducting solutions of stannic bromide in  $\text{CH}_3\text{COOH}$ , and compounds formed by stannic bromide with glycocoll are known. The authors made  $\text{SnBr}_4$ , purified it by repeated distillation and fractional freezing, and sealed the ampoules with the purified product, which had bp  $198.1^\circ \text{C}$  (699 mm), mp  $29^\circ \text{C}$ . The three organic acids were dried over anhydrous copper sulfate, purified by repeated distillation and fractional freezing, their boiling and melting points examined, and kept in sealed ampoules. As can be seen from Figs. 1, 2, and 3, the viscosity (in  $\eta \cdot 10^2$ )

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Electric Conductance, Viscosity, and Density      77345  
of Systems  $\text{SnBr}_4 \cdot \text{C}_2\text{H}_5\text{COOH}$ ,  $\text{SnBr}_4 \cdot \text{C}_3\text{H}_7\text{COOH}$ ,      SOV/79-30-1-6/78  
 $\text{SnBr}_4 \cdot \text{C}_5\text{H}_{11}\text{COOH}$

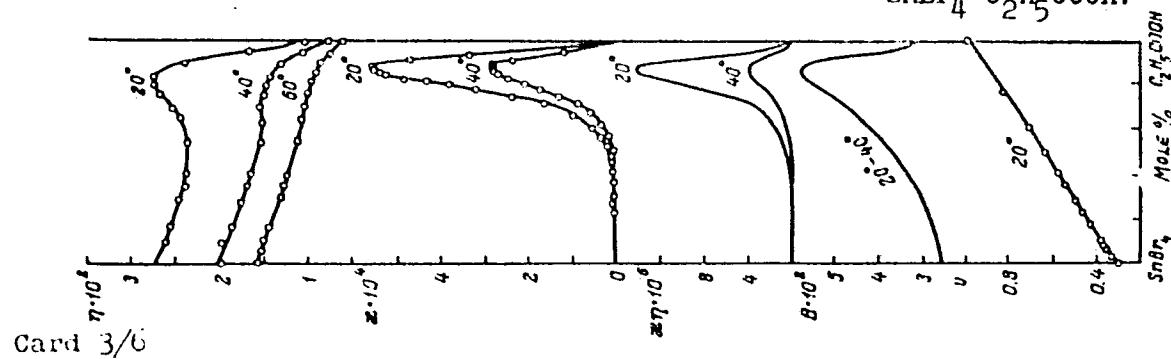
units), electric conductivity ( $\kappa \cdot 10^4$  units), their product ( $\kappa\eta \cdot 10^5$  units), and volume per unit mass of the binary systems were measured at certain constant temperatures, e.g., 20, 40, and 60° C, while constant

B of the equation  $\eta = Ae^{RT}$  was determined at temperatures varying from 20 to 40° C. The diagrams point to the existence of complex compounds, presumably of  $\text{SnBr}_4 \cdot 4\text{C}_2\text{H}_5\text{COOH}$ ;  $\text{SnBr}_4 \cdot 4\text{C}_3\text{H}_7\text{COOH}$ ;  $\text{SnBr}_4 \cdot 3\text{C}_5\text{H}_{11}\text{COOH}$ ; and  $\text{SnBr}_4 \cdot 4\text{C}_5\text{H}_{11}\text{COOH}$  composition. The four compounds are electrolytes and raise highly conductance of the otherwise nonconducting binary solutions. They are unstable at high temperatures. Consequently, the maxima caused by them on electric conductivity curves disappear readily at 60° C or even 40° C. Comparison of the electric conductivity multiplied by the viscosity ( $\cdot 10^5$ ) reveals that the degree of acid-base interaction between stannic bromide and carboxylic acids

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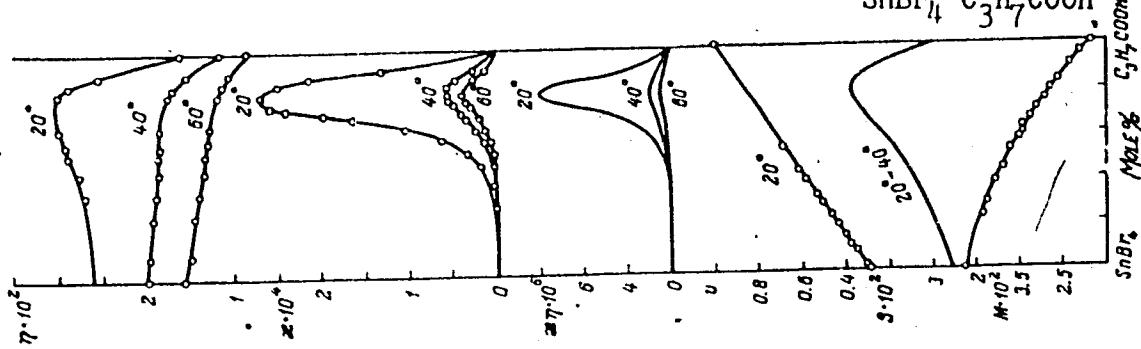
77345, SOV/79-30-1-6/78

Fig. 1. Property  
vs. composition  
curves for system  
 $\text{SnBr}_4 \cdot \text{C}_2\text{H}_5\text{COOH}$ .



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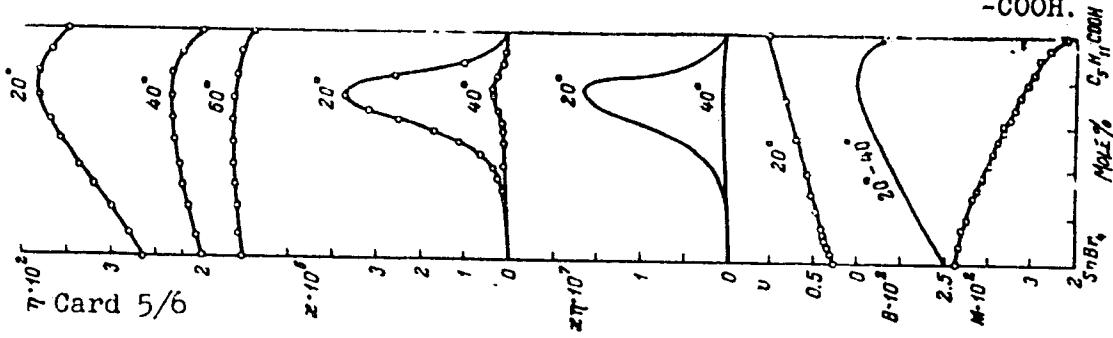
Fig. 2. Property vs. composition curves for system  $\text{SnBr}_4 \cdot \text{C}_3\text{H}_7\text{COOH}$



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Fig. 3. Property  
vs. composition  
curves for sys-  
tem  $\text{SnBr}_4 \cdot \text{C}_5\text{H}_{11}-$   
 $-\text{COOH}$ .



Electric Conductance, Viscosity, and Density  
of Systems  $\text{SnBr}_4\text{-C}_2\text{H}_5\text{COOH}$ ,  $\text{SnBr}_4\text{-C}_3\text{H}_7\text{COOH}$ ,  
 $\text{SnBr}_4\text{-C}_5\text{H}_{11}\text{COOH}$  77345  
SOV/79-30-1-6/78

decreases in the order  $\text{CH}_3\text{COOH} > \text{C}_2\text{H}_5\text{COOH} > \text{C}_3\text{H}_7\text{COOH} >$   
 $\text{C}_5\text{H}_{11}\text{COOH}$ . The same product indicates that the degree  
of interaction is higher in the case of chlorides.  
There are 4 figures; 9 tables; and 15 references, 12  
Soviet, 2 German, 1 U.S. The U.S. reference is:  
J. D. Stranathan, J. Strong, J. Phys. Chem., 31, 1420,  
1927.

ASSOCIATION: Institute of Chemical Sciences at the Academy of  
Sciences, Kazakh SSR (Institut khimicheskikh nauk Akad  
Akademii nauk Kazakhskoy SSR)

SUBMITTED: November 28, 1958

Card 6/6

S/079/60/030/04/64/080  
B001/B011

AUTHORS: Klimov, V., Sumarokova, T., Usanovich, M.

TITLE: On the Structure of the Complex Compound  
 $\text{SnCl}_4 \cdot 2\text{CH}_3\text{COOH} \cdot 2\text{NH}_2\text{CH}_2\text{COOH}$

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 4, pp. 1334-1336

TEXT: The complex compound  $\text{SnCl}_4 \cdot 2\text{NH}_2\text{CH}_2\text{COOH} \cdot 2\text{CH}_3\text{COOH}$  (Ref. 1) was separated upon the action of tin chloride on the solution of glycocoll in anhydrous acetic acid. The same complex compound was also obtained by the addition of two molecules  $\text{CH}_3\text{COOH}$  to the complex acid  $\text{SnCl}_4 \cdot 2\text{NH}_2\text{CH}_2\text{COOH}$ . The cryoscopic determinations of the molecular weight of the compound  $\text{SnCl}_4 \cdot 2\text{NH}_2\text{CH}_2\text{COOH} \cdot 2\text{CH}_3\text{COOH}$ , made in  $\text{CH}_3\text{COOH}$ , showed that the molecular weight determined constitutes  $1/3$  of the formula molecular weight, and thus, that this compound dissociates into three ions. On the strength of these data, the mixed complex compound was assumed to appear as the product of an acid-basic reaction of the complex acid  $\text{SnCl}_4 \cdot 2\text{NH}_2\text{CH}_2\text{COOH}$  with  $\text{CH}_3\text{COOH}$  and the latter,

Crd 1,3

On the Structure of the Complex Compound  
 $\text{SnCl}_4 \cdot 2\text{CH}_3\text{COOH} \cdot 2\text{NH}_2\text{CH}_2\text{COOH}$

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B001/B011

with its clear basic properties, to add on in the outer sphere (Ref. 1).  
Structure  $[\text{SnCl}_4(\text{NH}_2\text{CH}_2\text{COO})_2]^{2-} \cdot 2\text{CH}_3\text{COOH}^+$  was therefore ascribed to compound  
 $\text{SnCl}_4 \cdot 2\text{NH}_2\text{CH}_2\text{COOH} \cdot 2\text{CH}_3\text{COOH}$ . To obtain a confirmation of this assumption, the  
authors decided to investigate the ion transfer in the acetic acid solutions  
of compound  $\text{SnCl}_4 \cdot 2\text{NH}_2\text{CH}_2\text{COOH} \cdot 2\text{CH}_3\text{COOH}$ , by utilizing the labelled preparations  
 $\text{NH}_2\text{CH}_2\text{C}^{14}\text{OOH}$  and  $\text{CH}_3\text{C}^{14}\text{OOH}$ . They expected that glycocoll, a component of the  
anion  $[\text{SnCl}_4(\text{NH}_2\text{CH}_2\text{COO})_2]^{2-}$ , would move to the anode, and  $\text{CH}_3\text{COOH}$  to the  
cathode, on the action of electric current. It was found, however, that  
glycocoll, labelled with the isotope  $\text{C}^{14}$ , moves to the cathode, i.e. it is a  
component of the cation;  $\text{CH}_3\text{COOH}$  labelled with the isotope  $\text{C}^{14}$  goes mostly  
over to the anode, and is therefore a component of the anion. The complex com-  
pound has therefore the structure:  $[\text{SnCl}_4(\text{CH}_3\text{COO})_2]^{2-} (\text{NH}_3\text{CH}_2\text{COO})^+$ . There are  
1 table and 3 Soviet references.

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On the Structure of the Complex Compound  
 $\text{SnCl}_4 \cdot 2\text{CH}_3\text{COOH} \cdot 2\text{NH}_2\text{CH}_2\text{COOH}$

S/079/60/030/04/64/080  
B001/B011

ASSOCIATION: Institut khimii Akademii nauk Kazakhskoy SSR (Institute of  
Chemistry of the Academy of Sciences, Kazakhskaya SSR) ✓

SUBMITTED: May 6, 1959

Card 3/3

S/079/60/030/05/63/074  
B005/B126

5.3700

AUTHORS: Sumarokova, T. N., Medvedeva, T. V., Litvyak, I. G.

TITLE: Complex Compounds of Tin. V

PERIODICAL: Zhurnal obshchey khimii, 1950, Vol. 30, No. 5, pp. 1698-1705

TEXT: The authors carried out cryoscopic examinations of the eight systems from  $\text{SnCl}_4 \cdot 2\text{CH}_3\text{COOH}$  and  $\text{SnCl}_4 \cdot 2\text{C}_6\text{H}_5\text{COOH}$  on the one hand, and  $\text{C}_6\text{H}_5\text{COOH}$ ,  $\text{CH}_3\text{COOH}$ ,  $\text{CH}_2\text{ClCOOH}$ , and  $\text{C}_6\text{H}_5\text{OH}$  on the other, as well as the system  $\text{SnCl}_4 \cdot 2\text{C}_6\text{H}_5\text{COOH} - \text{CCl}_3\text{COOH}$  dissolved in pyridine, piperidine, or aniline.

Nine diagrams show the results, that is the relations between melting point depression and composition, and between molecular weight and composition of the system. The results confirm the earlier statement (Refs. 1-5) that complex compounds of the type  $\text{SnCl}_4 \cdot ?\text{RCOOH} \cdot \text{B}$  ( $\text{R} = \text{C}_6\text{H}_5$  or  $\text{CH}_3$ ;  $\text{B}$  - molecule of the organic cationium base) form in the systems examined. The three systems  $\text{SnCl}_4 \cdot 2\text{CH}_3\text{COOH} -$  pyridine, piperidine, aniline were also examined by cryo-

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Complex Compounds of Tin. V

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B005/B126

scopic titration. Three diagrams show the resulting titration curves. It became clear that complex compounds of the type  $\text{SnCl}_4 \cdot 2\text{CH}_3\text{COOH} \cdot 2\text{B}$  are formed likewise in these three systems. In the case of piperidine the compound  $\text{SnCl}_4 \cdot 2\text{CH}_3\text{COOH} \cdot 2\text{B}$  was also formed. On the thermal decomposition of these compounds the acetic acid is displaced from the inner sphere of the complex, and compounds of the type  $\text{SnCl}_4 \cdot 2\text{B}$  are formed. A diagram shows the special apparatus for carrying out the potentiometric titrations, in which the cryoscopic titrations were undertaken. M. I. Usanovich and Ye. I. Kalabanovskaya (Ref. 6) are mentioned. There are 13 figures and 8 Soviet references.

ASSOCIATION: Institut khimii Akademii nauk Kazakhskoy SSR (Institute of Chemistry of the Academy of Sciences of the Kazakhskaya SSR)

SUBMITTED: March 12, 1959

Card 2/2

30712

S/079/60/030/05/64/C74  
B005/B126

5.3700

AUTHORS: Sumarokova, T., Nevskaya, Yu., Yarmukhamedova, E.TITLE: Complex Compounds<sup>1</sup> of Halides of Tin<sup>1</sup> and Titanium<sup>1</sup> With Organic Compounds Containing C=O and -COC- Groups

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 5, pp. 1705-1714

TEXT: The authors examined the reactions of  $\text{SnCl}_4$ ,  $\text{SnBr}_4$ , and  $\text{TiCl}_4$  with quinones, furfurol, and dioxane by cryoscopic titration. Eight diagrams show the resulting titration curves (dependence of the melting point depression on the composition of the system). In the  $\text{SnBr}_4$ -quinone system compounds formed whose composition could not be determined. The  $\text{SnCl}_4$ -diethyl oxalate system was also examined cryoscopically. A diagram shows the relation between melting point depression and composition and between molecular weight and composition of this system. The investigations yielded the following results:  $\text{SnCl}_4$  and  $\text{TiCl}_4$  form complex compounds with quinone and dioxane in the molecular ratio 1:1, as does  $\text{SnCl}_4$  with diethyl oxalate and  $\text{SnBr}_4$  with

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RC71

Complex Compounds of Halides of Tin and Titanium  
With Organic Compounds Containing C=O and  
-COC- Groups

S/079/60/030/05/64/071  
B005/B101

dioxane. The complex compounds of  $\text{SnCl}_4$ ,  $\text{SnBr}_4$ , and  $\text{TiCl}_4$  with dioxane, of  $\text{SnCl}_4$  with diethyl oxalate, and of  $\text{TiCl}_4$  with quinone are to all appearances dimeric. The dimeric structure could only be proved with certainty for the complex compounds of  $\text{SnCl}_4$  with quinone and diethyl oxalate. In the systems examined the following complex compounds also formed:  $\text{SnBr}_4 \cdot 2\text{C}_5\text{H}_4\text{O}_2$ ,  $\text{TiCl}_4 \cdot 2\text{C}_5\text{H}_4\text{O}_2$ , and  $\text{TiCl}_4 \cdot 2\text{C}_4\text{H}_8\text{O}_2$ . The examinations carried out are described in detail in the experimental part. O. A. Osipov and collaborators (Ref. 13), A. S. Kurnakov and N. K. Voskresenskaya (Ref. 2) are mentioned. There are figures and 15 references, 6 of which are Soviet.

ASSOCIATION: Institut khimii Akademii nauk Kazakhskoy SSR (Institute of Chemistry of the Academy of Sciences of the Kazakhskaya SSR)

SUBMITTED: March 12, 1959

Card 2/2

SUMAROKOVA, T.; YARMUKHAMEDOVA, E.

Interaction between amino acids and stannic chloride and iodide.  
Zhur. ob. khim. 30 no.8:2441-2448 Ag '60. (MIRA 13:8)

1. Institut khimii Akademii nauk Kazakhskoy SSR,  
(Amino acids)  
(Tin chloride)  
(Tin iodide)

SUMAROKOVA, T.; NEVSKAYA, Yu.

Electric conductivity, viscosity, and density of the systems  
 $\text{SnCl}_4\text{-C}_2\text{H}_5\text{OH-C}_6\text{H}_6$  and  $\text{SnCl}_4\text{-C}_3\text{H}_7\text{OH-C}_6\text{H}_6$ . Zhur. ob. khim. 30  
no.11:3526-3531 N'60. (MIRA 13:11)

1. Institut khimii Akademii nauk Kazakhskoy SSR.  
(Systems(Chemistry))

NEVSKAYA, Yu.; SUMAROKOVA, T.

Cryoscopic titration of mixtures of organic substances. Zhur.  
prikl. khim. 33 no.12:2805-2808 D '60. (MIRA 14:1)

1. Institut khimicheskikh nauk AN KazSSR,  
(Cryoscopy)

SUMAROKOVA, T.N.; LITVYAK, I.G.; VALZHANINA, T.F. (Alma-Ata)

Cryoscopic study of the systems  $\text{SnCl}_4$  - RCOOH. Zhur. fiz. khim.  
34 no.12:2723-2726 D '60. (MIRA 14:1)

1. Akademiya nauk KazSSR, Institut khimii.  
(Tin chloride) (Acids, Matty)

SUMAROKOVA, T.N.; MEDVEDEVA, T.V.; LITVYAK, I.B. (Alma-Ata)

Oryoscopic study of complex-forming reactions. Zhur. fiz. khim.  
34 no.12:2727-2735 D '60. (MIRA 14:1)

1. Akademiya nauk KazSSR, Institut khimii.  
(Complex compounds)

SUMAROKOVA, T.N.

Amphoteric properties of hydracids. Izv.AN Kazakh. SSR. Ser.khim.  
no.1;7-31 '61. (MIRA 16:7)  
(Acids) (Bases (Chemistry))

NEVSKAYA, Yu.; SULAKSVA, T.

Electric conductivity, viscosity, and density of systems  $\text{SnCl}_4$  -  
 $n\text{-C}_4\text{H}_9\text{OH}$  -  $\text{C}_6\text{H}_6$  and  $\text{SnCl}_4$  -  $n\text{-C}_5\text{H}_{11}\text{OH}$  -  $\text{C}_6\text{H}_6$ . Part 2. Zhur.  
ob. khim. 31 no. 2:345-348 F '61. (MIRA 14:2)

1. Institut khimii AN Kazakhskoy SSR.  
(Systems (Chemistry))

NEVSKAYA, Yu.; SUMAROKOVA, T.

Complex compounds of SnCl<sub>4</sub> and SnBr<sub>4</sub> with dimedon and terpineol.  
Zhur. ob. khim. 31 no. 27348-351 F '61. (MIRA 14:2)

1. Institut khimii AN Kazakhskoy SSR.  
(Tin compounds) (Cyclohexanedione) (Terpineol)

SUCHAROKOVA, T.; LITVYAK, I.

Compounds of the type  $\text{SnX}_4$ . A.P. Zhur. ob. khim. 31 no. 2:352-354  
F '61. (KIRA 14:2)

1. Institut khimii AN Kazakhskoy SSR.  
(Tin compounds)

USANOVICH, M.I.; NURMAKOVA, A.K.; SUMAROKOVA, T.N.

Complexing reactions of pentavalent antimony. Part 1: Carboxylic acids. Zhur. ob. khim. 31 no. 11:3493-3500 N '61. (MIRA 14:11)

1. Institut khimicheskikh nauk AN Kazakhskoy SSR.  
(Antimony compounds) (Acids, Organic)

DEMBITSKIY, A.; SUMARCOVA, T.; USANOVICH, M.

Structure of complex compounds of stannic chloride with esters. Dokl.  
AN SSSR 137 no.6:1357-1360 Ap '61. (MIRA 14:4)

1. Institut khimii AN KazSSSR. Predstavлено академиком А.Н.  
Терениным.

(Tin compounds)

DEMBITSKIY, A.; SUMAROKOVA, T.

Raman spectra of systems formed of tin chloride with esters.  
Part 2. Opt. i spektr. 7 no.4:484-488 Ap '62. (MIRA 15:5)  
(Raman effect) (Tin chloride) (Esters)

DEMBITSKIY, A.D.; SUMAROKOVA, T.N.

Raman spectra of systems composed of tin chloride with esters.  
Opt. i spektr. 12 no.3:369-375 Mr '62. (MIRA 15:3)  
(Raman effect) (Tin chloride) (Esters)

SUMAROKOVA, T.N.; SAKENOVA, D.S.

Reactions of tin and titanium tetrahalides with diamines. Part 1:  
Ethylenediamine. (Zhur. ob khim. 32 no.1:3-9 Ja '62. (MIRA 15:2)  
(Ethylenediamine) (Tin halides)  
                          (Titanium halides)

SLASHCHEVA, L.A.; USANOVICH, M.I.; SUMAROKOVA, T.N.

Complex compounds of monovalent copper with thiourea. Part 1:  
Compounds of cuprous chloride and bromide. Zhur. ob. khim. 32  
no. 3:683-688 Mr '62. (MIRA 15:3)  
(Copper compounds) (Urea)

SLASHCHEVA, L.A.; USANOVICH, M.I.; SUMAROKOVA, T.N.

Complex compounds of monovalent copper with thiourea. Part 2: ~~B-12~~  
Compounds of cuprous chloride. Zhur. ob. khim. 32 no.8:2408-2411.  
Ag '62. (MIRA 15:9)  
(Copper chloride) (Urea)

SLASKEVA, L.A.; USANOVICH, M.I.; SUMAROKOVA, T.N.

Complex compounds of monovalent copper with thiocurea. Part 3:  
Compounds of cuprous sulfate. Zhur.ob.khim. 32 no.8:2412-2415  
Ag '62. (MIRA 15:9)

(Copper sulfate) (Urea)

L 13096-63 EPF(c)/EWP(j)/BDS/EWT(m) Pr-4/Pc-4 HM/W  
ACCESSION NR: AP3003410 S/0051/G3/015/001/0048/0051

AUTHOR: Dembitskiy, A.D.; Sumarokova, T.N.; Usanovich, M.I. 63

TITLE: Raman spectra of systems formed by stannic chloride and esters. Part.3.

SOURCE: Optika i spektroskopiya, v.15, no.1, 1963, 48-51

TOPIC TAGS: Raman spectrum, stannic chloride, ester, methylbutyrate

ABSTRACT: In earlier studies the authors (Doklady AN SSSR, 137, 1357, 1961 and Optika i spektroskopiya, 12, 369, 484, 1962) showed that the addition of stannic chloride to esters leads to weakening and eventual disappearance of the C=O stretching vibration band at  $1735\text{ cm}^{-1}$  as the compound  $\text{SnCl}_4 \cdot 2\text{ROOR}'$  is approached, and that at the same time there appears in the spectrum a band at about  $1630\text{ cm}^{-1}$  associated with vibrations of the C=O bond in the ester. Also, the band at  $403\text{ cm}^{-1}$ , due to antisymmetric Sn-Cl vibrations, in the stannic chloride molecule shifts towards lower frequencies (to  $340\text{ cm}^{-1}$ ). In view of this it was deemed of interest to investigate the intensities of the  $1630$ ,  $1735$  and  $403\text{ cm}^{-1}$  lines for the purpose of evaluating the concentrations of the free components and products. Methyl butyrate was chosen for the study on the basis of preliminary experiments which showed that the given system is particularly suitable for such studies. The Raman spectra were recorded photographically by means of an ISP-51 spectrograph. The

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ACCESSION NR: AP3003410

spectra were scanned on an MF-4 microdensitometer. The results for pure methyl butyrate and this ester with 50 mole percent stannic chloride are tabulated; they show that, as in the case of other esters, with addition of  $\text{SnCl}_4$  the  $1735 \text{ cm}^{-1}$  band broadens and shifts to lower frequencies. The results of further measurements with stannic chloride concentrations from 0 to 100% are tabulated and presented in the form of a diagram. Calculations based on the experimental data show direct proportionality between the line intensities and the volume concentration. Thus, measurement of Raman line intensities provides a means for evaluating the equilibrium concentrations in  $\text{SnCl}_4 +$  ester systems. Orig.art.has: 3 formulas, 3 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 25Oct62

DATE ACQ: 30Jul63

ENCL: DO

SUB CODE: CH,PMI

NO SOV REF: 010

OTHER: 003

Card 2/2

SUMAROKOVA, T.N.; MODESTOVA, T.F.

Polymorphism of potassium chloride. Izv. AN Kazakh. SSR. Ser. khim.  
nauk 14 no.1:26-33 Ja-Mr '64. (MIPA 18:3)

NURMAKOVA, A.K.; USANOVICH, N.I.; SUMAROKOVA, T.N.

Complex-forming reactions of pentavalent antimony. Part 3: Complex  
compounds of the type SbCl<sub>5</sub> · AC and SbCl<sub>5</sub> · AC · B. Zhur. ob. khim. 34  
no.1:3-7 Ja '64. (MIRA 17:3)

SUMAROHOVA, T.N.

Calculation of the equilibrium constants from cryoscopic titration curves. Zhur. fiz. khim. 38 no.2:31c-32c F '64.  
(VUF 17:8)

1. Institut khimii AN Kazakhskoy SSR, 41 -Ata.

ACCESSION NR: AP4036726

S/0020/64/156/002/0400/0403

AUTHOR: Gol'danskiy, V. I. (Corresponding member); Makarov, Ye. F.; Stukan, R. A.; Sumarokova, T. N.; Trukhtanov, V. A.; Khrapov, V. V.

TITLE: Characteristics of Mossbauer effect for tin compounds with a coordinate number six

SOURCE: AN SSSR. Doklady\*, v. 156, no. 2, 1964, 400-403

TOPIC TAGS: Mossbauer effect, gamma fluorescence, Debye Vallerovskiy factor, Mossbauerian atom, polymer crystal, crosslink bond, quadrupolar splitting, chemical displacement, tin compound, ionicity, crystal structure

ABSTRACT: The authors demonstrate that resonant  $\gamma$ -fluorescence without yield (the Debye-Vallerovskiy factor) and the character of the temperature curve essentially depend on the crystal-structure relationship of Mossbauerian atoms. Two tables show the amount of chemical displacement in the compounds investigated and the  $\alpha f'$  quantities for some of these compounds at temperatures of  $T = 78^{\circ}\text{K}$  and  $300^{\circ}\text{K}$ . In addition, a probable structure of  $\text{SnF}_4$  is illustrated. The strong quadrupolar splitting in the subject problem is explained by the essential differences in the

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ACCESSION NR: AP4036726

degree of  $sp^2d$  ionicity of the hybridized tetravalent Sn-F bond, with horizontal F atoms in a basic polymer crystal forming crosslink bonds between Sn and two other ( $p_z d_z 2$ ) SnF-bonds which evidently are ionic. During the migration from  $SnF_4$  to  $K_2SnF_6$  and  $Cs_2SnF_6$ , i.e., from the octahedron with a  $D_{4h}$  symmetry to  $O_h$  with six ( $sp^3d^2$ ) Sn-F equivalent bonds, the quadrupolar splitting disappeared. Instead, the increase in the degree of molecular symmetry was accompanied by a strong decrease in the Debye-Vallerovskiy factor (especially at room temperature), while the chemical displacement remained constant. Orig. art. has: 2 figures and 2 tables.

ASSOCIATION: Institut khimicheskoy fiziki. Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences SSSR)

SUBMITTED: 31Jan64

DATE ACQ: 03Jun64

ENCL: 00

SUB CODE: OC

NO REF SOV: 008

OTHER: 002

Card 2/2

YAKUBKEDOVA, E.Sh.; SULTANGALVA, T.N.; BATIRKOVA, N.A.

Composition and conditions of formation of basic copper salts. Izv.  
AN Kazakh. SSR. Ser. khim. nauk 15 no.2:45-50 Ap-Je '65.  
(MIRA 18:9)

YALCHEVSKOVA, S.Sh.; NYUROVA, R.Kh.; SUMAROKOVA, T.N.

Conductometric titration of some solutions containing  
 $\text{Fe}^{2+}$ ,  $\text{Mn}^{2+}$ ,  $\text{Cu}^{2+}$ ,  $\text{Mg}^{2+}$ , and  $\text{Si}_4^{2-}$  ions. Izv. Akad. Kazakh.  
o.R. Ser. Khim. nauk 15 no. 3:21-30 03-4g '65.

(KRA 1F:11)

L. Submitted February 9, 1965.

NEVSKAYA, Yu.A.; YARMUKHAMEDOVA, E.Sh.; SUMAROKOVA, T.N.

Reaction of tin bromide with dicarboxylic acid esters. Izv.  
AN Kazakh. SSR. Ser. khim. nauk 15 no.1:19-29 Ja-Mr '65.  
(MIRA 18:12)

SUMARUKOV, G. V.

Correlation between the redox potential of the hemolymph of cricket  
crickets and their radiosensitivity. Radiobiologija 2 no.3:  
374-377 '62. (MIRA 15:7)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

(HEMOLYMPH) (GAMMA RAYS—PHYSIOLOGICAL EFFECT)  
(OXIDATION-REDUCTION REACTION)

KUDRYASHOV, Yurii Borisovich. Prinimali uchastiye: KOZLOV, Yu.P.;  
SUMARUKOV, G.V.; TOLKACHEVA, Ye.N.; RYABCHENKO, N.V.; TARUSOV, B.N., red.;  
CHERKASOVA, V.I., red.; MURASHOVA, V.A., tekhn. red.

[Laboratory work in general biophysics in eight volumes]  
Praktikum po obshchei biofizike v. vos'mi vypuskakh. Pod  
obshchei red. B.N.Tarusova. Moskva, Vysshiaia shkola.  
No.7. [Radiobiology; radiation injury of biological objects  
under the effect of a single whole body X-ray or gamma ir-  
radiation] Radiobiologija; luchevoe porazhenie biologicheskikh  
ob'ektov pri deistvii obshchego odnokratnogo rentgenovskogo  
ili gamma-obluchenija. 1962. 273 p. (MIRA 16:4)  
(RADIOBIOLOGY—LABORATORY MANUALS)

SUNARUKOV, G.V.; KUDRYASHOV, Yu.B.

Potentiometric determination of the effectiveness of the  
protective action in cysteamine in mice. Med. rad. 8 no.6:  
L2-44 Je '63. (MIRA 17:4)

1. Iz Moskovskogo universiteta imeni Lomonosova.

ACCESSION NR: AP4001908

S/0205/63/003/006/0805/0808

AUTKOR: Sumarukov, G. V.

TITLE: Oxidation-reduction potential as an index of antiradiation effectiveness of various substances

SOURCE: Radiobiologiya, v. 3, no. 6, 1963, 805-808

TOPIC TAGS: antiradiation agent, oxidation reduction potential, tissue oxidation reduction potential, radioprotective agent, chemical radioprotector, radioprotector effectiveness

ABSTRACT: Stationary oxidation-reduction potentials ( $E_h$ ) were measured in muscles of mice in vivo with a LP-57M potentiometer under normal conditions and after injection of various substances. 5-10 mice were used to test the radioprotective effectiveness of each substance. The stationary oxidation-reduction potential ( $E_h$ ) value measured in vivo is an index of radiosensitivity change. The oxidation-reduction potential ( $E'_h$ ) value for various radioprotective substances measured in vitro as found in the literature is not an index of organism radioprotection. A protective substance lowers the potential value ( $E_h$ ) in the muscle, an ineffective substance does not change the  
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ACCESSION NR: AP4001908

potential, and a radiosensitizer increases the potential. It is difficult to classify effective radioprotective substances by their chemical nature. The only characteristic common to all these substances is that they cause shifts in  $E_h$  values proportional to their radioprotective effectiveness. These protective substances appear to decrease irreversible damage in the organism by increasing in the biosubstrate the number of reduced molecules capable of radiation oxidation. Orig. art. has: 2 tables.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova biologo-pochvennyy fakul'tet (Moscow State University, Biology-Soil Department)

SUBMITTED: 27Nov62

DATE ACQ: 13Dec63

ENCL: 00

SUB CODE: AM

NO REF Sov: 006

OTHER: 013

Cord 2/2

L 14291-65 ENG(a)/ENG(c)/ENG(j)/ENG(r)/ENG(v)/EST(1)/FS(v)-3 Pe-5 DD  
ACCESSION NR: AP4047331 S/0020/64/158/004/0970/0972

AUTHOR: Burlakova, Ye. V., Karagulyan, E. A.; Koi'sa, O. R.; Sumarukova,  
G. V.

TITLE: Changes in the physical and chemical structures of mammal B  
muscle during revivification and deep freezing

SOURCE: AN SSSR. Doklady\*, v. 158, no. 4, 1964, 970-972

TOPIC TAGS: tissue preservation, deep freezing, muscle biochemistry,  
tissue revival, mouse, triceps suras

ABSTRACT: Changes in the physical and chemical structures of tissue  
are determined from changes in resistance dispersion and capaci-  
tances at different frequencies and also from the deviation of the  
maximum tangent of the loss angle ( $\alpha_{tg}$ )<sup>1</sup>. In the present investiga-  
tion an attempt was made to measure the tangential dispersion of the  
loss angle and the oxidative-restorative potential for evaluating the  
condition of revived muscle and muscle preserved by deep freezing.  
The triceps suras of mice was used in all tests. Freezing took place  
in liquid nitrogen (-196°C), and thawing took place at room temperature.

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L 14291-65

ACCESSION NR: AP4047331

Four sets of conditions were investigated: 1) muscle was freshly prepared; 2) muscle was frozen in liquid nitrogen and thawed at room temperature; 3) muscle was processed with glycerin; and 4) muscle was processed with glycerin, frozen in liquid nitrogen, and thawed at room temperature. It was found through measurement of  $\text{tg } \delta$  that maximum loss occurred at 1 kc in fresh muscle. In muscle frozen in liquid nitrogen,  $\text{tg } \delta$  fell within the 10-kc range. This reflected the destruction of heavy molecules, probably lipoprotein complexes. As a result of processing muscle with glycerin prior to freezing, the maximum loss was reduced, indicating that processing with glycerin does not affect the physical characteristics of muscle tissue. Glycerin preserves the characteristics of muscle, and it prevents the destruction of lipoprotein structures during deep freezing. Glycerin was also found to inhibit the decrease in  $E''$ . Consequently, measuring the tangent of the loss angle and the extractive-restorative potential not only represents a new method of evaluating the condition of preserved tissue, but indicates the nature of processes taking place in muscle tissue in various conditions of preservation and storage. Crit. art. his: 2 figures.

Card 2 / 3

L 14291-65

ACCESSION NR: AP4047331

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M. V.  
Lomonosova (Moscow State University)

SUBMITTED: 05Apr64

ENCL: 00

SUB CODE: LS

NO REF Sov: 008

OTHER: 000

ATD PRESS: 3134

Card 3/3

BURIAKOVA, Ye.V.; KARAGULYAN, E.A.; KOL'S, O.R.; SUMARUKOV, G.V.

Change in the physical and chemical structures of muscles in  
warm-blooded animals in the case of survival and deep freezing.

Dokl. AN SSSR 158 no.4:970-972 O '64.

(MIRA 17:11)

1. Moskovskiy gosudarstvennyy universitet. Predstavлено академиком  
A.N. Belozerskim.

L 29836-66 EWT(m)  
ACC NR: AP6012874

SOURCE CODE: UR/0205/66/006/002/0272/0277

21  
B

AUTHOR: Kudryashov, Yu. B.; Kakushkina, M. L.; Mekhtiyeva, S. M.; Rachinskiy, F. Yu.  
Sumarukov, G. V.; Filenko, O. F.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Comparative evaluation of the protective activity of potential radioprotective agents (Bunte salts) on various biological models

SOURCE: Radiobiologiya, v. 6, no. 2, 1966, 272-277

TOPIC TAGS: radioprotective agent, radiation biologic effect, ~~experiment animal~~  
~~mouse, blood~~

ABSTRACT: It has been postulated that the aminoalkylthiosulfuric acids or Bunte salts can be hydrolyzed in vivo to yield radioprotective aminoalkylthiols. In order to confirm this and develop a means of testing potential radioprotective agents against in vitro models, the activity of 7 of these salts was compared with that of 3 known radioprotective agents in male white mice irradiated with 200 — 1000 rad, and in intact human erythrocytes,

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UDC: 577.391:628.58

L 29836-66

ACC NR: AP6012874

1 - Maximal tolerated dose of the preparation (mg/kg); 2 - Survival to 30 days after irradiation with 900 r; 3 -  $\Delta$ C of mouse tissue (mm) 20-30 min. after inj. of the preparation; 4 - radiation model; 5 - radionuclotide model; 6 - radiation model (300 hr); 7 - radionuclotide model; 8 - concentration of each preparation is 0.02 M; 9 - Concentration of the aerasomes.

Note: The numbers in parentheses indicate the absolute value of the protective coefficient.

representing the ratio  $\frac{D_{\text{eff}}(\text{m})}{D_{\text{eff}}(\mu)}$  for the erythrocyte models and the ratio  $\frac{D_{\text{eff}}(\text{nm})}{D_{\text{eff}}(\mu)}$  for the

D<sub>50</sub>, (a) indicates addition of a radioprotective agent, and (c) indicates control, i.e.

without the addition of a radioprotective agent.

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L 29836-66

ACC NR: AP6C12874

haploid yeast cells (*Zygosaccharomyces bailii*), or solutions of  $\beta$ -carotene irradiated with 1000 rad/min; the protective agents were injected intraperitoneally 25 — 30 min before irradiation or added to the suspension 1 — 5 min before irradiation or addition of a radiomimetic agent. The results shown in the table indicate that compounds can be tested for radioprotective activity in *in vitro* systems, but that prolonged contact is required. Orig. art. has: 1 table, 1 figure, and 2 formulas. [08]

SUB CODE: 06/ SUBM DATE: 05Aug<sup>64</sup>/ ORIG REF: 009/ OTH REF: 001/ ATD PRESS:  
5013

Card 3/3 ✓

YUSUPOV, A.Yu., dotsent; SUMATOKHINA, L.I.

Glaucoma among the organized population of Samarkand. Vest.  
oft. 76 no.5:53-56 S-0 '63. (MIRA 17:1)

1. Kafedra glaznykh bolezney (zav. - zasluzhennyy deyatel'  
nauki prof. N.I. Medvedev) Samarkandskogo meditsinskogo  
instituta imeni I.P. Pavlova.

SUMAVSKY, J.

Still on sheetpaper shipments in pallets. p. 181.

PAPIR A. CELULOSA. (Ministerstvo lesu a drevarskeho prumyslu) Praha, Czechoslovakia.  
Vol. 14, no. 8, Aug. 1959.

Monthly list of East European Accessions (EEAI) LC, Vol. 8, no. 10, Oct. 1959.  
uncl.

1. [REDACTED]
2. [REDACTED] (FCC)
3. [REDACTED]
4. [REDACTED]
5. [REDACTED]
6. [REDACTED]
7. [REDACTED]
8. [REDACTED]
9. [REDACTED]

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

SUMBADZE, L.Z.; BERIDZE, V.V., red.; AVALIANI, N.M., red.izd-va;  
DZHAPARIDZE, N.A., tekhred.

[Colchis dwelling according to Vitruvius] Kolkhidskoe  
zhilishche po Vitruviu. Tbilisi, Izd-vo Akad.nauk Gruz.SSR,  
1960. 51 p. (MIRA 13:?)  
(Vitruvius Pollio) (Colchis--Dwellings)

SUMBAK, A. A., Cand Tech Sci -- (diss) "Calculation and model-making of pre-stressed cylindrical reinforced concrete shells." Tallin, 1960. 39 pp with illustrations; (State Committee of Higher and Secondary Specialist Education of the Council of Ministers Estonian SSR, Tallin Polytechnic Inst, Chair of Construction Structures); 200 copies; price not given; bibliography at end of text (16 entries); (KL, 17-60, 159)

SUMBAL, J., inz.

Research on the Vah River concaves I and II near Piestany.  
Vodni hosp 13 no.5:195 '63.

SUMBAL, Jareslav, inz.

Consideration of the possibility of using an aerodynamic  
model for direct examination of basin clogging by mud.  
Vodohosp cas 12 no. 1: 92-104 '64.

1. Research Institute of Water Resources Management,  
Bratislava.

Solntsev, Jaroslav, Inc.

Simple adjustment of the K52 heat-current anemometer for simultaneous measurement of velocity direction in a two-dimensional airflow. Vodohosp ces 12 no.2:220-224 '64.

I. Research Institute of Water Resources Management,  
Bratislava.

SURDATOV G. A.

Tiosemikarbazony v terapii tuberkuleza. *Thiocsemicarbonates in tuberculosis therapy* Sovet. end. No. 6 June 51 p. 6-9.

1. Of the First Therapeutic Division (Head--Prof. I. I. Berlin),  
Moscow Oblast Scientific-Research Tuberculosis Institute  
(Director--Prof. F. V. Shebanov).  
CMU, Vol. 20, No. 10 Oct 1951

SUMBATOV, G. A.

Tibione as a chemotherapeutic in tuberculosis. Fel'dsher &  
akush., Moskva no.4:17-21 April 1952. (CLML 22:2)

SUMBATOV, G.A.

Aplication of phthiazide in the treatment of tuberculosis. Probl.  
tuberk., Moskva no.2:29-36 Mar-Apr 1953. (CIML 24:3)

1. Of Moscow Oblast Scientific-Research Tuberculosis Institute (Director  
— Prof. I. V. Shebanov) and the Department of Tuberculosis of the Cen-  
tral Institute for the Advanced Training of Physicians (Director — V. P.  
Lebedeva).

SUMBATOV, G.A.

New Russian chemotherapeutic preparation against tuberculosis, phthivazide. Yel'dash & akush. no.8:31-34 Aug 1953. (CML 25:1)

1. Moscow.

BERLIN, I.I., professor; SUMRATOV, G.A.; SHERANOV, F.V., professor, direktor.

Results of application of phthivazide in tuberculosis. Klin.med. 31 no.8:  
67-71 Ag '53. (MLRA 6:11)

1. Moskovskiy oblastnoy nauchno-issledovatel'skiy tuberkulesnyy institut.  
(Tuberculosis) (Nicotinic acid)

SURBITON, G. I.

Surbiton, G. I.

"'Ftivazid' in the treatment of patients with pulmonary tuberculosis."  
Min Health USSR. Central Inst for the Advanced Training of Physicians.  
Moscow, 1956 (Dissertation for the degree of Doctor in Medical  
Science)

Knizhnaya letopis'  
No. 15, 1956. Moscow

OLENEVA, T.N.; SUMBATOV, G.A.; YEVDOKIMOVA, V.M.; KUMASHENSKAYA, Ye.A.

Use of butadione in tuberculosis. Probl.tub. no.7:39-44 '62.  
(MIRA 15:12)

1. Iz kafedry tuberkuleza (zav. - zasluzhennyy deyatel' nauki prof. A.Ye.Rabukhin) TSentral'nogo instituta usovershenstovaniya vrachey, TSentral'noy klinicheskoy bol'nitsy Ministerstva putey soobshcheniya imeni N.A.Semashko (glavnnyy vrach A.A.Potsubeyenko) i bol'nitsy "Zakhar'ino" (glavnnyy vrach V.P.Petrik).  
(TUBERCULOSIS) (BUTADIONE)

PLETNER, N. Kh.; LIBENSON, V.S.; SUMBATOV, G.A.

Some manifestations of hyperfunction of the pituitary-adrenal system in tuberculosis patients following antibacterial therapy.  
Probl. tub. 41 no.3:79-80'63. (MIRA 16:9)

1. Iz kafery tuberkuleza (zav. - prof. A.Ye. Rabukhin) Tsentral'nogo instituta usovershenstvovaniya vrachey i 3-y gorodskoy klinicheskoy tuberkuleznoy bol'nitsy "Zakhar'ino" (glavnnyy vrach V.P.Petrik, nauchnyy rukovoditel' prof. F.I.Levitin), Moskva.

(PITUITARY GLAND--DISEASES)  
(ADRENAL CORTEX--DISEASES) (TUBERCULOSIS)  
(CHEMOTHERAPY)

SUMBITOV, L. A., Physician

"Carbuncles of the Face and Their Treatment." Sub 12 Feb 51, Second Moscow State Medical Inst imeni I. V. Stelin.

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55.

USSR/Medicine - Apparatus for Suturing Jul/Aug 51  
Blood Vessels

"Review of Engineer V. F. Gudov's Book 'New Method  
of Joining Severed Blood Vessels,'" I. A. Sumbatov,  
Card. Med. Sci.

"Khirurgiya" No 7, p 84

Gudov has invented a new method of joining the ends  
of severed blood vessels by circular sutures made  
by means of a mech appliance. There is a foreword  
in the book by A. A. Vishnevsky. The danger of  
trombosis forming in the sutured blood vessels  
along the handmade seam inside the lumen has always

218T45

USSR/Medicine - Apparatus for Suturing Jul/Aug 51  
Blood Vessels (Contd)

been great. It is avoided by the use of metal clips  
in such a manner that no thrombus can form along the  
smooth suture. The app and the method are illustra-  
ted. The published instructions are timely because  
the industry is beginning to supply Gudov's app.  
There seem to be some contradictions in the text:  
On p 12 Gudov says that the ends of blood vessels  
are folded back like a cuff by a "special arrange-  
ment," but on p 28 he refers to the use of 2 ana-  
tomical tweezers.

218T45

1. SUMBATOV, L. A. .
  2. USSR (600)
  4. Transplantation (Physiology)
  7. "Tissue therapy." G. YE. Rumyantsev. Reviewed by L. A. Sumbatov.  
Klin. med. 30 No. 10, 1952
9. Monthly List of Russian Accessions, Library of Congress, March 1953, Uncl.

SUMBATOV, R.A.; IBATULLIN, R.Kh.; BIKCHURIN, T.N.; KOZLOV, F.A.

Drilling wells of decreased diameter using a turbotachometer.  
Neft. khoz. 42 no.6:12-17 Je '64. (MIRA 17:8)

SOV/177-58-2-17/21

17(7)  
AUTHOR: Sumbatov, S.A., Colonel of the Guards in the Medical Service

TITLE: On the Organization of Work in X-ray Sections

PERIODICAL: Voyenno-meditsinskiy zhurnal, 1958, Nr 2, pp 83-84 (USSR)

ABSTRACT: This item is a brief treatment of some aspects of the organization of work in the X-ray room based on a study of the operation of the X-ray department in hospital X in the five year period 1952 - 1956 inclusive. The author tabulates the distribution of the röntgenologist's working time for 5 basic types of work over the week, which shows that the greatest amount of time is spent on X-rays of the chest cavity - i.e. more than 3.5 working days per week. It is to this particular form of work that the author limits himself in the balance of the article. He then tabulates the proportion of patients in the hospital with diseases of the chest cavity, circulatory system, or with rheumatism to the overall number of patients for the six year period 1951 - 1956 inclusive, which shows that an average of only 8.02% are so affected. Thus, he states, only 8% of patients are those requiring X-ray

Card 1/2

S0V/177-58-2-17/21

**On the Organization of Work in X-ray Sections**

treatment, rather than fluoroscopy, or conversely, 92% of the volume of work in the hospital was directed to prophylactic examination of patients, which he concludes becomes a hindrance to the staff. He proposes that all patients, save those with diseases of the chest cavity, circulatory systems, and rheumatic patients, be subjected, rather, to fluoroscopic examination which would free the X-ray staff for other more important work, especially for introduction of new methods of diagnosis. There are 3 tables.

Card 2/2

PIVTOAK, B.D., inzh.; SUMATOV, V.A., inzh.

Using flat-wound pipes in assembling aluminum pipelines. Mont. i  
spets. rab. v stroi. 23 no. 2: 5-6 Mr '61. (MIA 14:2)

1. Kazanskoye stroitel'no-montazhnoye upravleniye tresta No.7 Glav-  
neftemontazha.  
(Tatar A.S.S.R.--Petroleum--Pipelines) (Pipe, Aluminum)

SUMBATYAN, V.A., burovoy master

We used the No. 9 bit for drilling an extradepth well. Neftianik  
5 no. 12:9-10 D '60. (MIRA 13:12)

1. Kontora glubokogo bureniya Neftepromyslovoego upravleniya  
Stavropol'neft'.  
(Stavropol Territory--Oil well drilling--Equipment and supplies)

SUMBATYAN, Yu., podpolkovnik

Noncapitalist way of development and the state of a national  
democracy. Komm. Vooruzh. Sil 46 no.20:77-82 O '65.  
(MIRA 18:12)

SUMBAT-ZADE, A.S.

History of the development of the copper-smelting industry in  
Azerbaijan during the second half of the 19th century. Uch.zap.  
AGU no.4:69-81 '55. (MLRA 9:11)  
(Azerbaijan--Copper industry--History)

SUMBATZADE, A.S.

History of alum production in Azerbaijan in the 19th century.  
Uch. zap. AGU no.9:103-111 '55. (MLRA 9:11)

(Zaglik--Alum)

SUMBAT-ZADE, A.S.

Development of commercial and economic relations between Azerbaijan  
and Central Russia during the first half of the nineteenth century.  
Uch.zap.AGU no.3:101-112 '56. (MLRA 10:4)  
(Russia--Commerce--Azerbaijan) (Azerbaijan--Commerce--Russia)

REDAKTOV, A. G.

ALIYEV, N.M., akademik, redaktor; ALIYEV, G.A., akademik, redaktor; MUSAYEV,  
H.-A., akademik, redaktor; TOPCHIBASHEV, M.A., akademik, redaktor;  
OSSYNOV, M.A., ekspert, redaktor; KHANIMOV, Z.I., ekspert, redaktor;  
SHULYEV, V.V., redaktor; ~~SUMBATOV, A.A.~~, redaktor; AFENDIYEV, A.A.,  
redaktor; PAVLOV, M.N., tekhnicheskiy redaktor

[Proceedings of the first scientific session of the Azerbaijan  
Council of the Academy of Sciences of the Azerbaijan SSR.]  
Trudy pervoi nauchnoi sessii Soveta po koordinatsii nauchnoi raboty  
Azerbaizhanskoy SSR. Baku, 1957. 324 s. (.... 10:10)

1. Akademika nauch Azerbaizhanskoy SSR, Baku. Sovet po koordinatsii  
nauchnoi rabot resposibil'nost'. 2. Chlen-Korrespondent  
Akademii nauch Azerbaizhanskoy SSR (for Aliyev, Sumbatov, Afendi-  
yev)

(Research)

~~TYPE OF INFORMATION~~  
~~SUBBAT-ZADE, A.S.~~

Exploitation of the working peasantry of Azerbaijan by the merchant-usurer capital during the 2d half of the 19th century. Uch. zap. AGU no.2:121-130 '57.  
(MIRA 11:1)  
(Azerbaijan--Agriculture--Economic aspects)

SUMBAT-ZADE, A.S.

The Nakhichevan salt quarry in the 19th century. Uch.zep. AGU  
no. 9:71-78 '57. (MIRA 11:11)  
(Nakhichevan District--Salt mines and mining)

SUMBAT-ZADE, A.S., akademik, red.; GUSEYNOV, I.A., akademik, red.; DADASH-ZADE, M.A., akademik, red.; KASHKAY, M.A., akademik, red.; MUSTAFAYEVA, S., red.; AKHMEDOV, S., tekhn.red.

[The Azerbaijan Soviet Socialist Republic] Azerbaidzhanskaia Sovetskaia Sotsialisticheskaiia Respublika. Pod red. A.S. Sumbat-zade i dr. Baku, Azerbaidzhanskoe gos.izd-vo, 1958. 67 p.  
(MIRA 12:1)

1. Akademiya Nauk Azerbaydzhanской SSSR (for Sumbat-zade, Guseynov, Dadash-zade, Kashkay).  
(Azerbaijan)

SUMBAT-ZADE, A.S.

[Agriculture of Azerbaijan in the 19th century] Sel'skoe khozai-  
stvo Azerbaidzhana v XIX v. Bakn, Akademia nauk Azerbaidzhanskoi  
SSR, 1958. 363 p. (MIRA 11:10)

(Azerbaijan—Agriculture)

SUBBATZADE, A.G.; MIKAYILOV, R.V., red.; DZERAFSHOV, A., red.

[Azerbaijan industry in the 19th century] Prosvetlennost'  
/zerbaidzhana v XIX v. Baku, Izd-vo AN Azeri SSR, 1964.  
500 p. (MIRA 17:10)

ISMAILOV, M.A.; SUMBATZADE, A.S., akad., red.

[Capitalism in Azerbaijani agriculture at the end of  
the 19th and the beginning of the 20th century] Kapi-  
talizm v sel'skom khoziaistve Azerbaidzhana na iskhode  
XIX-nachale XX v. Baku, Izd-vo AN Azerb. SSR, 1964.  
305 p. (MIRA 18:1)

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AUTHORS:

Shapunov, L. A., Krichmar, S. I.,  
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S/076/60/034/01/029/044  
B004/B007

TITLE:

A Photoelectric Apparatus for Luminescence Determinations

PERIODICAL:

Zhurnal fizicheskoy khimii, 1960, Vol 34, Nr 1, pp 182 - 183  
(USSR)

ABSTRACT:

A description is given of an apparatus for determining extremely weakly luminescent substances as e.g. organic impurities in mineral acids, salt solutions, etc. The circuit diagram of the apparatus is shown in a figure. It is fed by the alternating current of the mains via an electromagnetic stabilizer of the type SNE-220-0.5. Behind the stabilizer an autotransformer is connected, which reduces the voltage for the mercury-quartz lamp of the type PRK-4 to 100 v. A neon lamp of the type MN-5 flashes up if the mercury quartz lamp with the optimum operational conditions selected (50 v, 2.2 a) burns, thus indicates that the apparatus is ready for use. The light of the PRK-4-type lamp falls through a light filter and a stop on to the sample and excites luminescence. Luminescence radiation then passes through a liquid filter

Card 1/2

A Photoelectric Apparatus for Luminescence  
Determinations

S/076/60/034/01/029/044  
B004/B007

with a concentrated  $\text{NaNO}_2$  solution and hits the photo cathode of the FEU-19M-type photomultiplier. The photoelectric current is conveyed via a compensating resistance and a direct-current amplifier to the galvanometer. Under the conditions selected the characteristics of the photomultiplier and of the direct-current amplifier are linear, so that the reading of the galvanometer is proportional to luminescence intensity. The application of this apparatus for luminescence analyses in the nitrogen industry considerably increased the precision of investigations which have hitherto been carried out visually. There are 1 figure and 3 Soviet references.

ASSOCIATION: Dneprodzerzhinskiy azotno-tukovyy zavod (Dneprodzerzhinsk  
Nitrogen Fertilizer Factory)

SUBMITTED: April 21, 1958

Card 2/2

SURBAYEV, I. S.

Surbayev, I. S. "On the role of the time factor in disorders to the memory and anticipation," in the collection: Voprosy klinich. psikiatii, (Irkutsk), 1948, p. 6-32.

SO: U-3736, 21 May 53, (Letopis 'Zhurnal 'nykh Statey, No. 18, 1949).

Surbayev, I. S.

Surbayev, I. S. "Basic types of pathological thinking," In the collection: Voprosy klinich. psikiatii, (Irkutsk), 1948, p. 69-87.

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Saribayev, I. S.

Saribayev, I. S. "On disturbances to self-awareness in schizophrenia," in the collection:  
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Sumbayev, I. S.

Sumbayev, I. S. "On a classification of psychic disturbances," In the collection:  
Voprosy klinich. psikiatrii, (Irkutsk), 1943, p. 196-202.

SO: U-3736, 21 May 53, (Letopis 'Zhurnal 'nykh Statey, No. 13, 1943).

SUMBAEV, I.S. [deceased]

Classification of mental diseases and reactions. Trudy Gos.  
nauch.-issl. inst. psikh. 40sl5-22 '63 (MIRA 1787)

Disorders of the prognostic function in neuropsychic diseases.  
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Factor of congenital predisposition in the structure of in-  
volutional paranoid. Ibid. 241-48

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SUMBAEV, O. I.

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Testing and operation of a ~~new~~ <sup>21</sup> spectrometer  
A. Konstantinov, O. I. Sushko

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tel 112

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Surbayev, G. I.

Category : USSR/Nuclear Physics - Instruments and Installations, C-2  
Methods of Measurement and Investigation.

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 5782

Author : Konstantinov, A.A., Surbayev, G.I., Chekin, V.V.  
Inst : All-Union Scientific Research Institute for Metrology.  
Title : Concerning Tests and Operating Modes of a Luminescent Gamma Spectrometer.

Orig Pub : Izv. AN SSSR, ser. fiz., 1956, 20, No 3, 347

Abstract : The average effectiveness of electron collection from the cathode of the FEU-19 photomultiplier is increased by approximately a factor of two by using a non-uniform voltage divider (in particular, one should have  $U_{1-2} : U_{2-3} \approx 1:4$ ). The photomultipliers were tested with short illumination pulses from a Kerr cell. Using a CsI (Tl) crystal, the resolving power ( $h_v$ )  $\approx 1$  Mev), obtained for ten out of the one hundred tested photoelectronic multipliers with non-uniform divider was better than 10% (if the potential distribution is uniform, the resolution obtained in all cases was worse than 15%).

Card : 1/1

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SUMMARY OF INFORMATION

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SUMBAYEV, O. I. Cand Tech Sci -- (diss) "Construction of a Two-Meter Crystal-Diffraction Spectrometer and Its Application to the Study of Gamma Spectra." Len, 1957. 11 pp 20 cm. (Committee <sup>of</sup> Standards, Measures, Tests and Measuring Devices, Council of Ministers USSR, All- Union Scientific Research Inst of Metrology im D. I. Mendeleyev), 120 copies (KL, 25-57, 114)

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